

Claims

1. A system for accelerating the flow of data packets between a client who is a dial-in customer of an Internet service provider and a server in a communication network comprising:

(a) a connection optimization interface device located at said Internet service provider's facility intermediating between a bank of modems and the Internet, and

(b) connection means for connecting the connection optimization interface device between a plurality of clients and a plurality of servers with each client and server requesting and transmitting a plurality of data packets from each other.

2. The system of claim 1 wherein the connection optimization device includes software means for managing the connection optimization interface device operation.

3. The system of claim 1 wherein the connection optimization interface device includes buffer means for storing data from the data packets and connection information.

4. The system of claim 1 wherein the connection optimization interface device includes memory means for storing the software means.

5. The system of claim 1 wherein the connection optimization interface device includes processor means for operating said connection optimization interface device.

6. A system for accelerating the flow of data packets between a client who is a dial-in customer of an Internet service provider and a server in a communication network comprising:

(a) a connection optimization interface device located at said Internet service provider's facility intermediating between a bank of modems and the Internet, said device having:

(i) buffer means for storing data from the data packets and connection information;

(ii) software means for managing the connection optimization interface device operation;

(iii) memory means for storing the software means;

(iv) processor means for operating the connection optimization interface device; and

(b) connection means for connecting the connection optimization interface device between a plurality of clients and a plurality of servers with each client and server transmitting and requesting a plurality of data packets from each other.

7. The system of claim 6 wherein the software means includes means for managing the client TCP/IP connection.

8. The system of claim 6 wherein the software means includes means for managing the server TCP/IP connection.

9. The system of claim 6 wherein the software means includes means for scheduling the data packet transmissions against servers.

10. The system of claim 6 wherein the software means includes means for scheduling the data packet transmissions against clients.

11. The system of claim 6 wherein the software means includes means for translating the data packets, wherein the translating means includes means for reformatting the data packets by adding, modifying or removing cookies, and by removing comments or other non-essential contents of the data packets.

12. The system of claim 6 wherein the software means includes means for determining the contents of the data packet and forwarding the data packet if it is filled to the efficient transmission unit.

13. The system of claim 6 wherein the software means includes means for determining the contents of the data packet and holding the data packet in the buffer if it does not approximate the efficient transmission unit, accumulating a plurality of data packets in the buffer, restructuring the data packets to approximate the efficient transmission unit, then forwarding the data packet.

14. The system of claim 6 wherein the software means contains a transformation means whereby the data packet size may be dynamically compressed or encrypted prior to transmission, with the client having a software transformation means to dynamically transform the data packet by decompression or de-encryption upon arrival.

15. The system of claim 6 wherein the buffer means is random access memory.

16. The system of claim 6 wherein the buffer means is flash memory.

17. The system of claim 6 wherein the buffer means is a disk memory.

18. The system of claim 6 wherein for each client connected to the device the software means further includes means for collecting data packet transfer rates between the device and the client, associating such rates with the client data packet header information, retaining the transfer rates in the buffer means, determining the average data transfer speed for data packets, forwarding the data packets at a rate approximate to the data transfer rate, queuing excess data packets in the buffer means.

19. The system of claim 6 wherein for each server connected to the device the software means further includes means for collecting data packet transfer rates between the connection optimization interface device and the server, associating such rates with the server data packet header information, retaining the transfer rates in the buffer means, determining the average data transfer speed for data packets, forwarding the data packets at a rate approximate to the data transfer rate, and queuing excess data packets in the buffer means.

20. The system of claim 6 wherein for each server connected to the connection optimization interface device the software means includes means for monitoring the connection means to determine an average connection speed between the server and the connection optimization interface device.

21. The system of claim 6 wherein for each client connected to the connection optimization interface device the software means includes means for monitoring the connection means to determine an average connection speed between the client and the connection optimization interface device and associating the resulting average connection speed information with the data packets.